



Case Report:
Type A Dissection Presenting as a Double Aortic Valve

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Abstract: We report a case of spontaneous aortic root dissection in a middle-aged male without history of recent trauma, mimicking double aortic valve on the echocardiogram which extended to the right brachiocephalic artery. The patient immediately underwent Bentall procedure.

Key Words: Aortic root dissection; Double aortic valve; Bentall procedure.

Introduction:

Acute aortic dissection type A is a life-threatening disease. Complications such as aortic rupture, cardiac tamponade and acute aortic regurgitation require immediate surgical intervention. We report a case of spontaneous aortic root dissection in a middle-aged male without history of recent trauma mimicking a double aortic valve on the echocardiogram.

Case Report:

A 49 years old man presented with sudden onset of severe chest pain while standing. His intense chest pain lasted for few seconds followed by dull ache which persisted throughout the night without any radiation. It was associated with shortness of breath and orthopnoea. He also had a brief episode of loss of vision in his right eye. His background history includes hypertension and ex-smoker. His ECG did not show any ischemic changes and his high sensitive troponin was 290 which was increased to 400 on serial measurement. On examination his blood pressure was 100/40 and was saturating 94% on room air. He was initially treated as non ST elevation myocardial infarction by emergency department. On cardiology team review he was found to have diastolic murmur. He then had an urgent ECHO which showed severe aortic regurgitation (AR), diastolic mitral regurgitation (MR) (Figure 1) and aortic dissection mimicking double aortic valve (Figure 2). His diastolic MR was suggestive of sudden increased in his left ventricular end diastolic pressure secondary to acute severe AR. He underwent CT aortogram (Figure 3) which showed type A aortic dissection extending in to the right brachiocephalic

artery which probably explains his transient loss of vision. He underwent Bentall procedure on the same day.

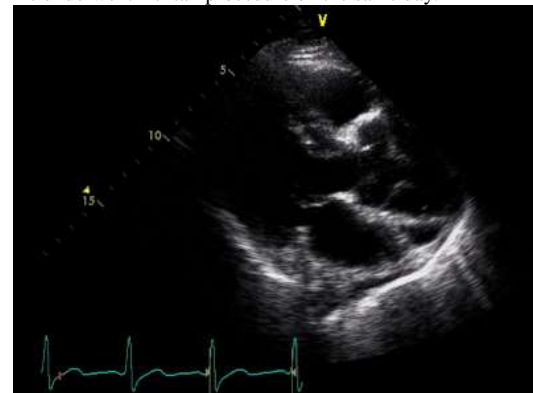


Figure 1: Parasternal long axis view showing the dissection flap in the aortic root

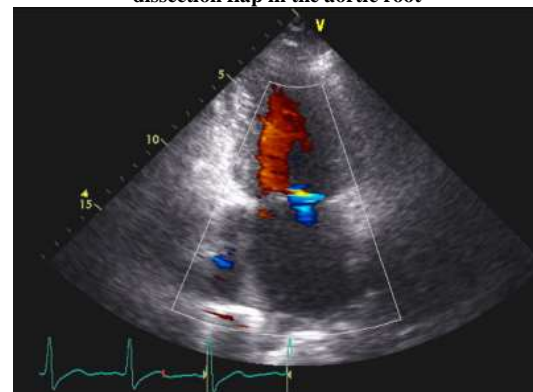


Figure 2: Colour Doppler image demonstrating severe aortic insufficiency

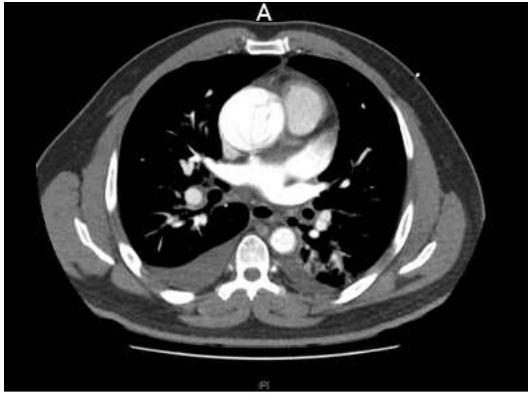


Figure 3: Computerised tomographic aortogram showing the aortic dissection

Discussion

The most commonly injured site of the ascending aorta transection is just above the aortic valve after blunt trauma.[1,2] In the case presented, the type of the rupture is typical of traumatic injury, although the patient denied any injuries in the recent past. To best of our knowledge only 3 cases have been reported so far.[3-5] These cases have been tabulated in Table 1.

Author	Year	Country	Age	Gender	Management
Panagiotou et al[3]	2010	Greece	48	Male	Bentall procedure with a mechanical prosthetic valve
Atashband et al[4]	2012	USA	36	Male	Aortic valve replacement with a composite mechanical valve conduit and hemi-arch repair using a Gelweave graft
Chan et al[5]	2007	UK	52	Female	Refused surgical intervention and was treated with medical therapy

In acute dissection involving the ascending aorta, the non-coronary cusp becomes incompetent as the dissection proceeds toward the aortic annulus and the cusp prolapses into the ventricle, producing significant aortic insufficiency.[6] The other cusps are usually spared, as the coronary ostia anchor the intima to the media and adventitia.[6] The second most commonly dissected sinus is the right coronary sinus. Cases of coronary ostial dissection may be associated with malperfusion, as the aortic false channel progresses into the coronary ostium, creating an extension of the false lumen into the coronary artery. In general, the false lumen is located in the upper aspect of the artery. Its extension along the length of the artery is variable and may involve the artery for several millimeters.[7]

In similar situations of De Bakey Type II dissections with involvement of the aortic root, the surgical procedure of choice is composite graft replacement. The aortic root replacement with a composite graft, according to the classic Bentall procedure, significantly improved the postoperative outcome, providing satisfactory early and long-term results.[8]

In the case reported here, the orifice of the left coronary was repaired with intermittent stitches. It is believed that repair of torn coronary arteries is preferable to coronary bypass grafting. It avoids ligation of the coronary ostium and the consequent complete graft-dependent perfusion of large territories of the myocardium, while also providing antegrade flow in the coronary tree.[3]

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